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Fax

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Art Unit:	1763
Organization:	United States Patent and Trademark Office
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Date:	November 29, 2007
Subject:	Notice of Appeal
Docket No.:	F125
Pages:	33 pages *(including this coversheet)*

APPLICATION No.:	10/758,966	ART UNIT:	1763
FILING DATE:	January 16, 2004	EXAMINER:	Allan W. Olsen
INVENTOR(S):	Diane K. Stewart et al.		
TITLE:	Electron Beam Processing for Mask Repair		

In connection with the above-identified patent application, applicants submit the following:

1. Fee Transmittal (in duplicate) (1 p);
2. Appeal Brief (26 pp.)
3. Petition for Extension of Time (in duplicate) (1 p); and
4. PTO-2038 Credit Card Form (1 p)

David Griner
Patent Reg. No.: 47,614

Applicants attempted to fax file the attached documents on November 28, 2007. The Auto-Reply Facsimile Transmission form received back from the PTO indicated that not all pages were received. Accordingly, Applicants are resubmitting the entire Appeal Brief and all transmittal documents.

Attorney Docket No.: F125

I. Real Party in Interest

The real party in interest in this appeal is:

FEI Company, an Oregon Corporation having its principal place of business in Hillsboro, Oregon.

II. Related Appeals and Interferences

There are no prior or other pending appeals, judicial proceedings, or interferences known to appellant which may be related to, directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

Attorney Docket No.: F125

III. Status of Claims

A. Total Number of Claims in Application

There are a total of 14 claims in the application.

B. Status of All the Claims

1. Claims canceled: 13-20
2. Claims withdrawn from consideration but not canceled: NONE
3. Claims pending: Claims 1-12 and 21-22
4. Claims allowed: NONE
5. Claims rejected: 1-12, 21-22

C. Claims on Appeal

The claims on appeal are: 1-12, 21-22

IV. Status of Amendments

Appellants have not filed any amendments subsequent to final rejection.

V. Summary of Claimed Subject Matter

Applicants' claims 1, 21, and 22 are in independent form.

The present invention provides methods of restoring transparency to a substrate having reduced light transmission, for example, from gallium atoms incidentally implanted by a focused ion beam used to remove material. Defects in photolithography masks are often repaired using focused beams of gallium ions. Unfortunately, the ion beam also damages the mask surface and implants gallium ions into the substrate, thereby reducing the transmission of light and adversely affecting the performance of the mask. (Specification, p. 2, lines 10-17.) The transparency of the mask can be restored by etching away the implanted quartz, however removing the implanted material changes the thickness of the substrate which in turn changes the phase of the transmitted light. This also adversely affects the performance of the mask. (Specification, p. 2, lines 18-23; p. 3, lines 1-2.)

Applicants have found that the transparency of the repaired area can be restored by